Li-Po 3.7 V

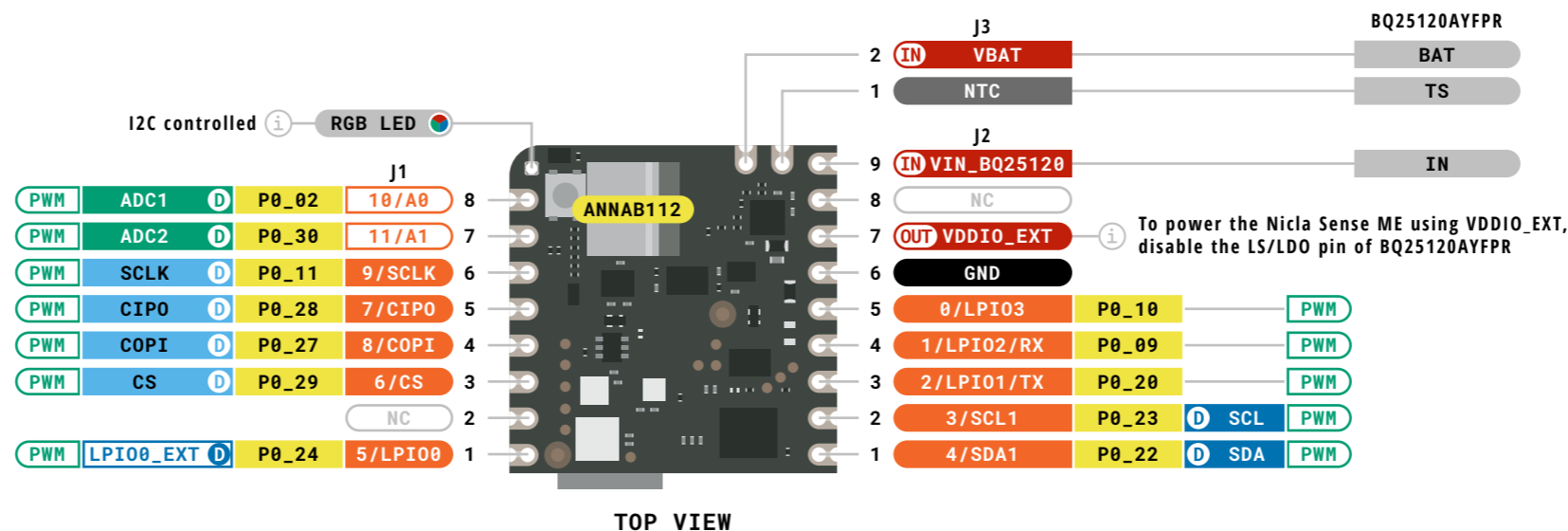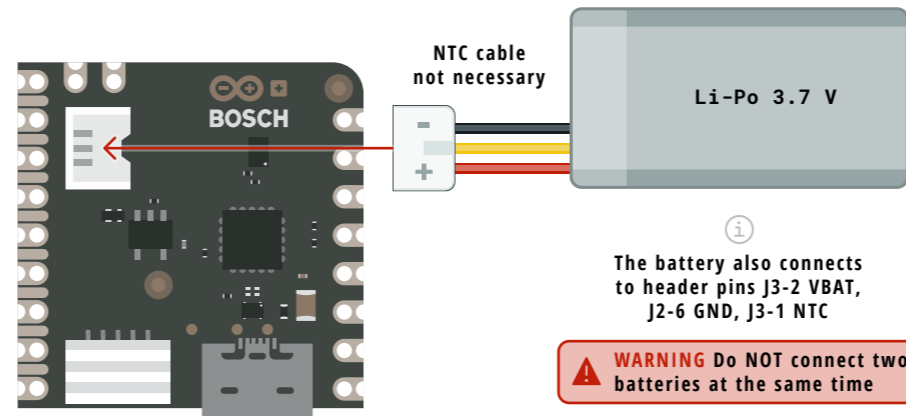**If the battery has NTC cable, connects it to the NTC pin**

TOP VIEW

ⓘ The battery also connects with the Battery Connector on the bottom of the board

⚠️ **WARNING** Do NOT connect two batteries at the same time

I2C controlled ⓘ | **RGB LED** ●

J3 — BQ25120AYFPR

2	IN	VBAT		BAT
1		NTC		TS

J2

9	IN	VIN_BQ25120		IN
8		NC		
7	OUT	VDDIO_EXT	ⓘ	To power the Nicla Sense ME using VDDIO_EXT, disable the LS/LDO pin of BQ25120AYFPR
6		GND		

J1

PWM	ADC1	D	P0_02	10/A0	8
PWM	ADC2	D	P0_30	11/A1	7
PWM	SCLK	D	P0_11	9/SCLK	6
PWM	CIPO	D	P0_28	7/CIPO	5
PWM	COPI	D	P0_27	8/COPI	4
PWM	CS	D	P0_29	6/CS	3
				NC	2
PWM	LPIO0_EXT	D	P0_24	5/LPIO0	1

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J2 (right)

5	0/LPIO3	P0_10			PWM
4	1/LPIO2/RX	P0_09			PWM
3	2/LPIO1/TX	P0_20			PWM
2	3/SCL1	P0_23	D	SCL	PWM
1	4/SDA1	P0_22	D	SDA	PWM

TOP VIEW

BOSCH

NTC cable not necessary

Li-Po 3.7 V

ⓘ The battery also connects to header pins J3-2 VBAT, J2-6 GND, J3-1 NTC

⚠️ **WARNING** Do NOT connect two batteries at the same time

BOTTOM VIEW

Legend:

■	Power		
IN	Power Input		
OUT	Power Output		
■	Ground		

■	GPIO Digital External
▢	Analog External
■	Main Part
■	Secondary Part
■	Internal Component
■	Other Pins (Reset, System Control, Debugging)

■	I2C	D	Default
■	SPI	D	Default
■	UART/USART	D	Default
▢	Other SERIAL Communication		
■	Analog	D	Default
▢	PWM/Timer		

⊕	LED
●	RGB LED
▢	Other

⚠️ **MAXIMUM** LPIOs are driven by bidirectional translators powered by VDDIO_EXT. These translators are meant for low power and can only drive very limited current. Please check translator datasheet for details.
VDDIO_EXT is software programmable between 1.8 and 3.3V

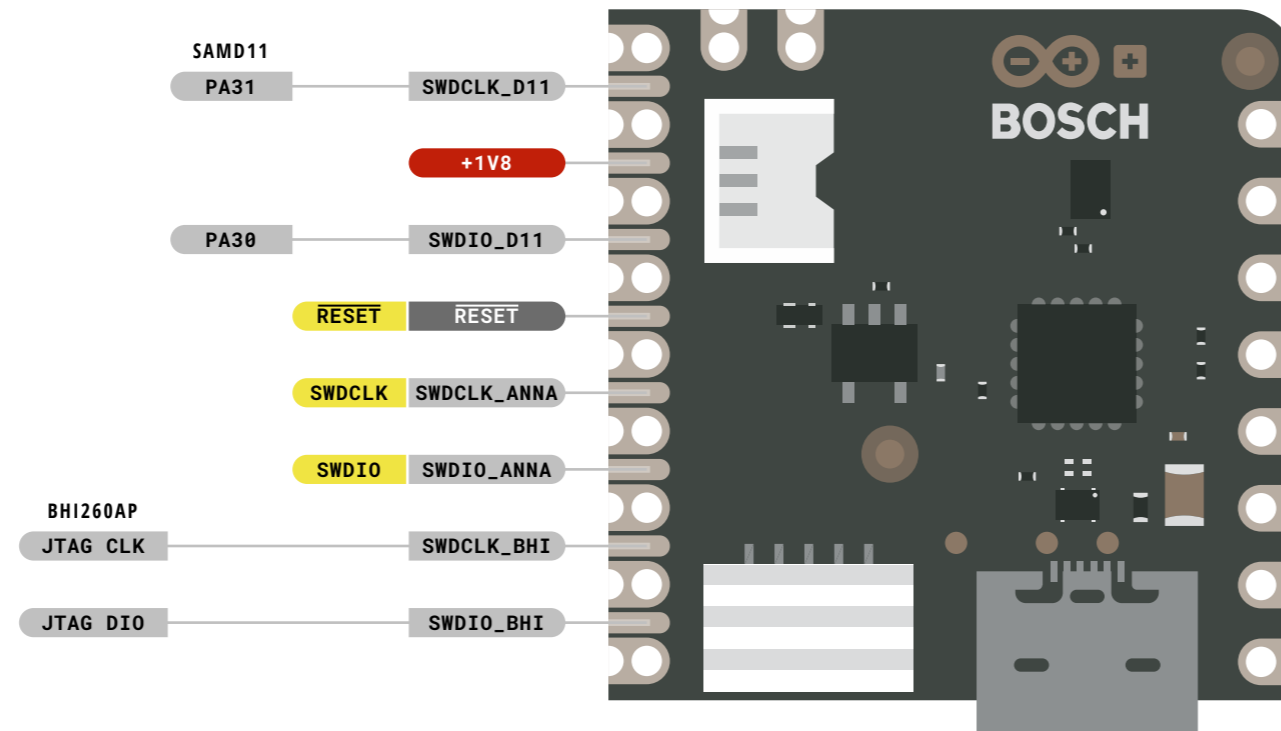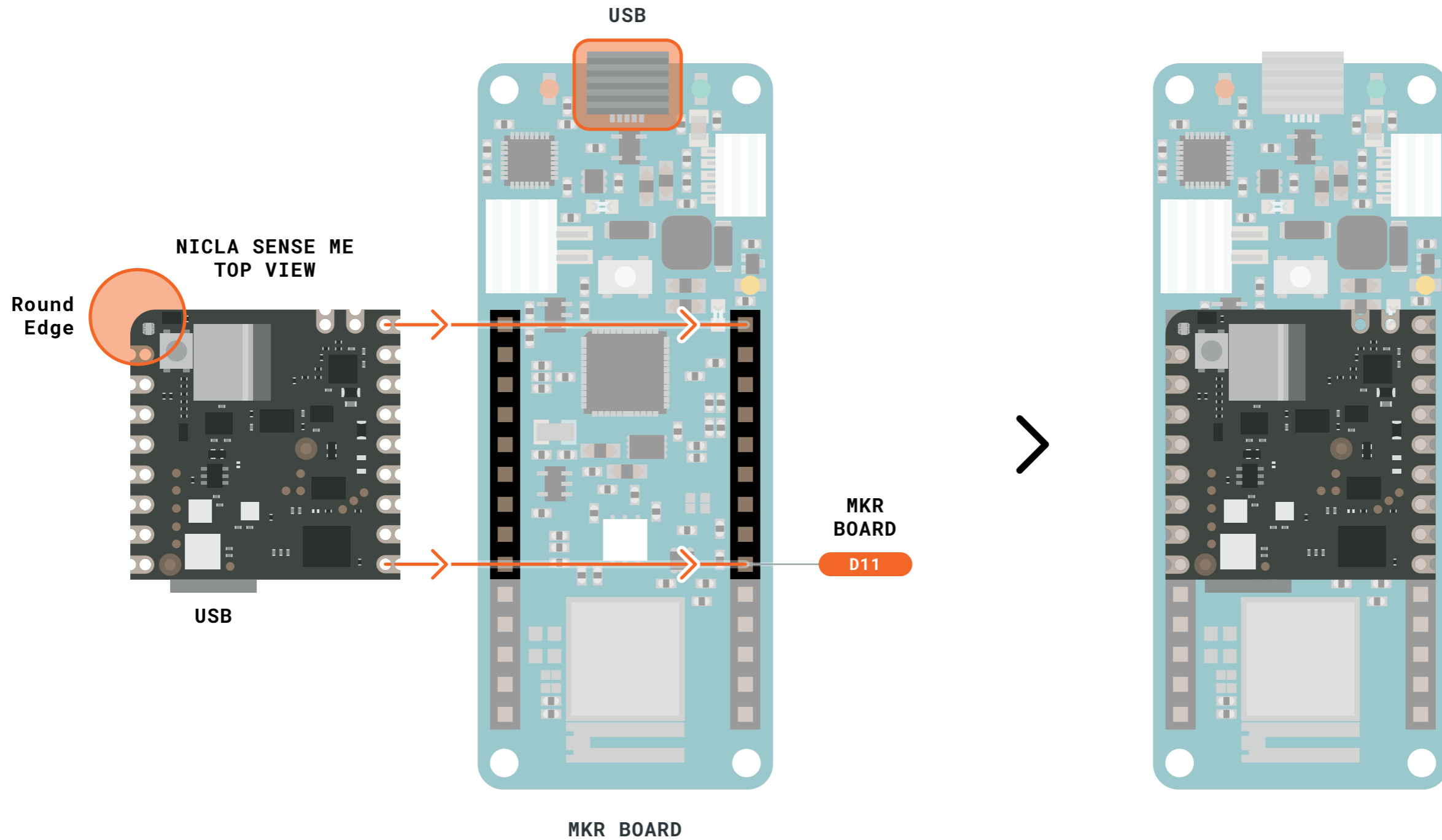ⓘ CIPO/COPI have previously been referred to as MISO/MOSI

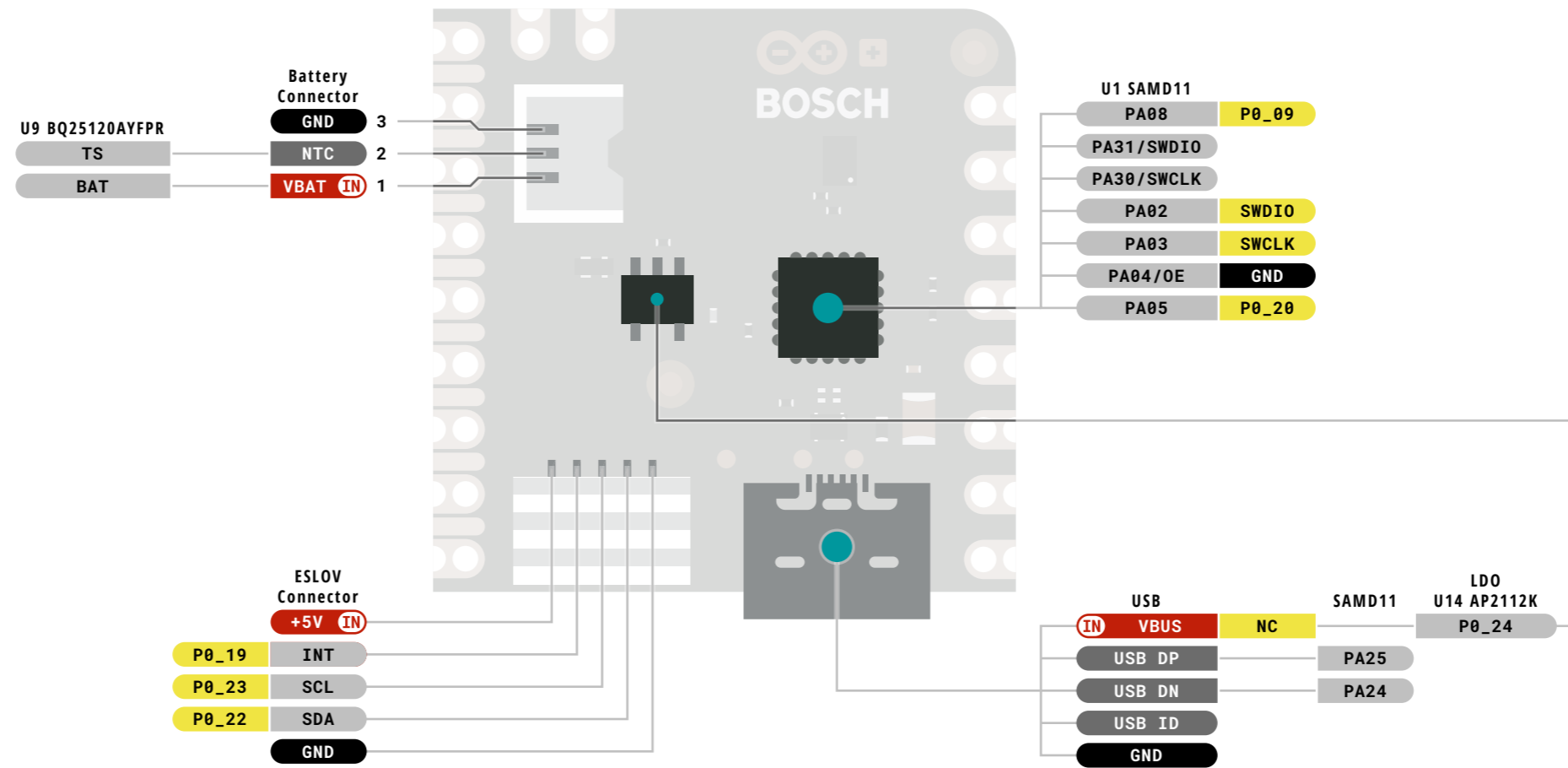## BOTTOM VIEW

SAMD11

PA31	SWDCLK_D11
	+1V8
PA30	SWDIO_D11
RESET	RESET
SWDCLK	SWDCLK_ANNA
SWDIO	SWDIO_ANNA

BHI260AP

| JTAG CLK | SWDCLK_BHI |
| JTAG DIO | SWDIO_BHI |

Compatible with MKR Boards

USB

NICLA SENSE ME
TOP VIEW

Round Edge

USB

MKR BOARD

D11

MKR BOARD

BOTTOM VIEW

U9 BQ25120AYFPR
- TS
- BAT

Battery Connector
- GND — 3
- NTC — 2
- VBAT **IN** — 1

U1 SAMD11
PA08	P0_09
PA31/SWDIO	
PA30/SWCLK	
PA02	SWDIO
PA03	SWCLK
PA04/OE	GND
PA05	P0_20

ESLOV Connector
	+5V **IN**
P0_19	INT
P0_23	SCL
P0_22	SDA
	GND

USB
IN VBUS	NC
USB DP	
USB DN	
USB ID	
GND	

SAMD11
- PA25
- PA24

LDO U14 AP2112K
- P0_24

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ARDUINO

NICLA
SENSE ME

WARNING!

Advanced Section

The following information is for advanced use only and may not be officially supported by Arduino software

ARDUINO

RGB LED Driver
U8 IS31FL3194

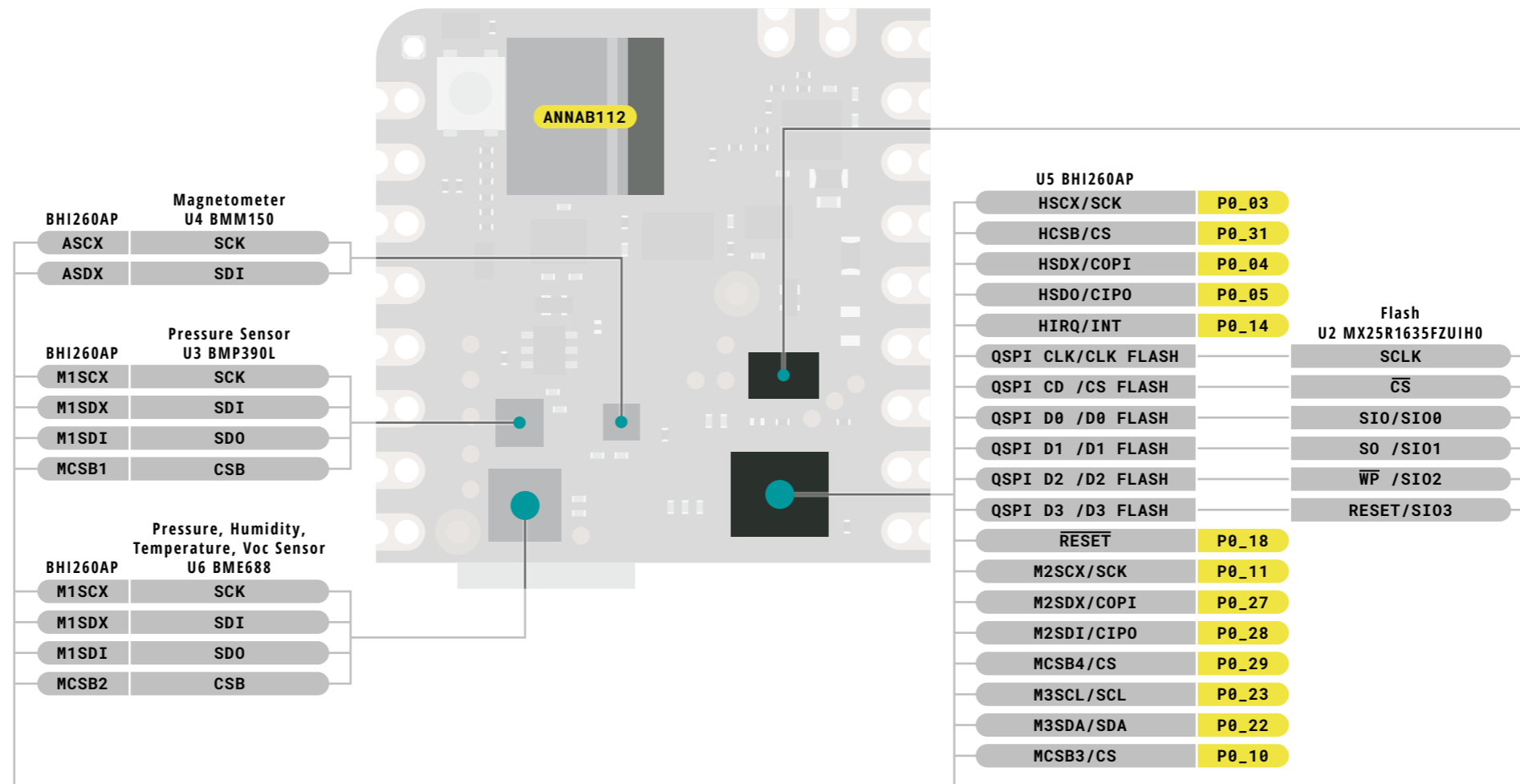| P0_15 | SDA |
P0_16	SCL
	VCC/V_PMID
red	OUT3
green	OUT2
blue	OUT1

I2C controlled ⓘ ── RGB LED 🔴

U9 BQ25120AYFPR

MR	RESET
SCL	P0_16
SDA	P0_15
$\overline{CD}$	P0_25
LS/LDO	

VDDIO_EXT ⓘ

Disabling the LS/LDO pin it is possible to power
the Nicla Sense ME using VDDIO_EXT pin on the header

ⓘ If LS/LDO pin is enabled, it is possible to configure
the Nicla Sense ME to work at +3V3 or +1V8, depending
on the configuration of the maximum input voltage

ANNAB112

Y1 SIT1532AI

| P0_00 | CLK |

U7 MX25R1635FZUIH0

SCLK/SCK	P0_03
$\overline{CS}$	P0_26
SIO/SIO0/COPI	P0_04
SO /SIO1/CIPO	P0_05

TOP VIEW

Legend:

- 🟥 Power
- ⬛ Ground
- IN Power Input
- OUT Power Output
- 🟥 GPIO Digital External
- ⬜ Analog External
- 🟨 Main Part
- 🟧 Secondary Part
- ⬜ Internal Component
- ⬛ Other Pins (Reset, System Control, Debugging)
- 🔴 LED
- 🔵 RGB LED
- ⬜ Other

ARDUINO

NICLA
SENSE ME

DOCS.ARDUINO.CC

TOP VIEW

ANNAB112

BHI260AP

BHI260AP	Magnetometer U4 BMM150
ASCX	SCK
ASDX	SDI

BHI260AP	Pressure Sensor U3 BMP390L
M1SCX	SCK
M1SDX	SDI
M1SDI	SDO
MCSB1	CSB

BHI260AP	Pressure, Humidity, Temperature, Voc Sensor U6 BME688
M1SCX	SCK
M1SDX	SDI
M1SDI	SDO
MCSB2	CSB

U5 BHI260AP

HSCX/SCK	P0_03
HCSB/CS	P0_31
HSDX/COPI	P0_04
HSDO/CIPO	P0_05
HIRQ/INT	P0_14

U5 BHI260AP	Flash U2 MX25R1635FZUIH0
QSPI CLK/CLK FLASH	SCLK
QSPI CD /CS FLASH	$\overline{CS}$
QSPI D0 /D0 FLASH	SIO/SIO0
QSPI D1 /D1 FLASH	SO /SIO1
QSPI D2 /D2 FLASH	$\overline{WP}$ /SIO2
QSPI D3 /D3 FLASH	RESET/SIO3

$\overline{RESET}$	P0_18
M2SCX/SCK	P0_11
M2SDX/COPI	P0_27
M2SDI/CIPO	P0_28
MCSB4/CS	P0_29
M3SCL/SCL	P0_23
M3SDA/SDA	P0_22
MCSB3/CS	P0_10

Legend:

- **Power** (red)
- **IN** Power Input
- **OUT** Power Output
- **Ground** (black)
- **GPIO Digital External**
- **Analog External**
- **Main Part**
- **Secondary Part**
- **Internal Component**
- **Other Pins (Reset, System Control, Debugging)**
- **LED**
- **RGB LED**
- **Other**

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NICLA SENSE ME

Test Points

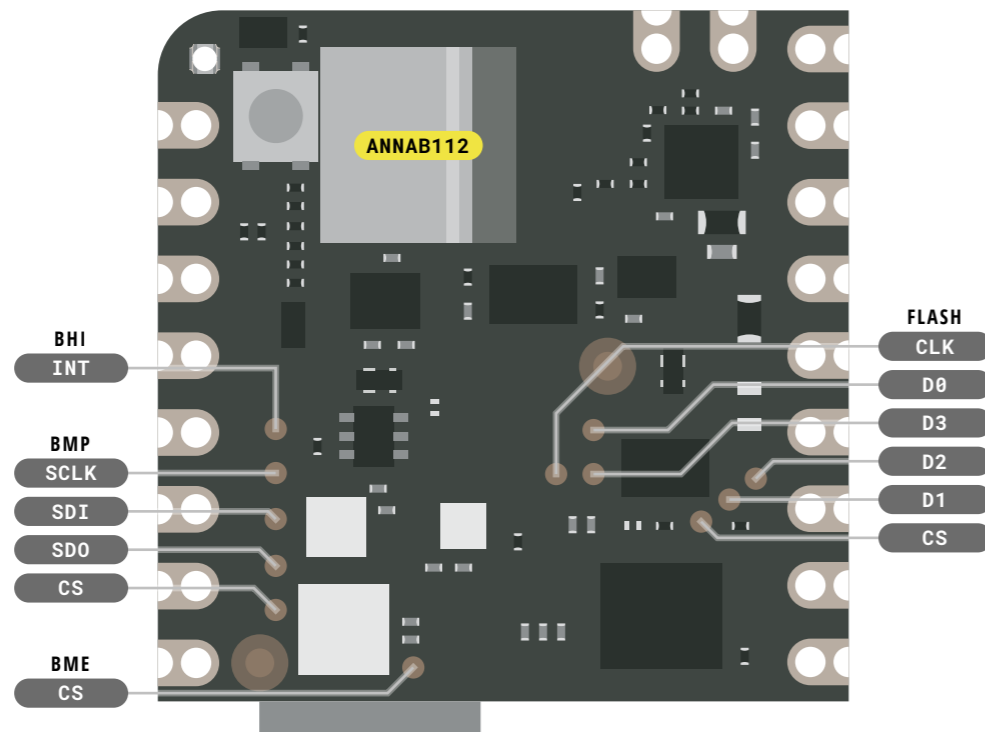## TOP VIEW

BHI
- INT

BMP
- SCLK
- SDI
- SDO
- CS

BME
- CS

FLASH
- CLK
- D0
- D3
- D2
- D1
- CS

BOTTOM VIEW

BOSCH

- +3V3

USB
- D_P
- D_N

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ARDUINO

NICLA SENSE ME

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